

WHAT IS CLAIMED IS:

1. A gas turbine combustor comprising:

a combustor inner cylinder;

a diffusion flame formation cone which is disposed  
5 inside of the combustor inner cylinder and which forms  
diffusion flames by mixing pilot fuel with air;

a premixed flame formation nozzle which is provided  
annularly between the combustor inner cylinder and a pilot  
flame formation cone and which forms premixed flames out  
10 of premixed gas formed by mixing main fuel with the air;  
and

a premixed flame formation nozzle extension section  
which is disposed at an outlet of the premixed flame formation  
nozzle and which forms a flow of premixed gas turning in  
15 a peripheral direction of the combustor inner cylinder while  
being directing outward in a diameter direction of the  
combustor inner cylinder.

2. The gas turbine combustor according to claim 1 further  
20 comprising a combustor inner cylinder cooling unit which  
is provided on a portion on which at least premixed flames  
formed by the premixed flame formation nozzle or flames  
formed by the gas ejected from the mixed gas formation  
cylinder are struck against an inner periphery of the  
25 combustor inner cylinder.

3. A gas turbine combustor comprising:

a combustor inner cylinder;

a diffusion flame formation cone which is disposed inside of the combustor inner cylinder and which forms diffusion flames by mixing pilot fuel with air;

a premixed flame formation nozzle which is provided annularly between the combustor inner cylinder and a pilot flame formation cone and which forms premixed flames out of premixed gas formed by mixing main fuel with the air;

10 and

a premixed flame formation nozzle extension section which is disposed at an outlet of the premixed flame formation nozzle while being inclined outward in a diameter direction of the combustor inner cylinder and in a peripheral direction of the combustor inner cylinder with respect to an axial direction of the combustor inner cylinder, and which ejects premixed gas formed at the premixed flame formation nozzle.

4. The gas turbine combustor according to claim 3, further comprising a combustor inner cylinder cooling unit which is provided on a portion on which at least premixed flames formed by the premixed flame formation nozzle or flames formed by the gas ejected from the mixed gas formation cylinder are struck against an inner periphery of the combustor inner cylinder.

5. A gas turbine combustor comprising:

a combustor inner cylinder;

a mixed gas formation cylinder which has a nozzle  
ejecting pilot fuel and a nozzle ejecting main fuel, and  
5 which is disposed inside of the mixed gas formation cylinder;  
and

a mixed gas ejection extension section which is  
disposed at an outlet of the mixed gas formation cylinder  
while being inclined outward in a diameter direction of the  
10 combustor inner cylinder and in a peripheral direction of  
the combustor inner cylinder with respect to an axial  
direction of the combustor inner cylinder, and which ejects  
gas formed by mixing the pilot fuel with air and premixed  
gas formed by mixing the main fuel with the air.

15

6. The gas turbine combustor according to claim 5, further  
comprising a combustor inner cylinder cooling unit which  
is provided on a portion on which at least premixed flames  
formed by the premixed flame formation nozzle or flames  
20 formed by the gas ejected from the mixed gas formation  
cylinder are struck against an inner periphery of the  
combustor inner cylinder.